ONTARIO MINISTRY OF ENVIRONMENT
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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

TOWN OF RIDGETOWN

COUNTY OF KENT

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Report on water pollution
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Report on

WATER POLLUTION SURVEY

TOWN OF RIDGETOWN

County of Kent

September 1964

The Division of Sanitary Engineering

A water pollution survey was made in the Town of Ridgetown on July 23, 1964.

Mrs.M. Mack, Clerk-Treasurer, was interviewed and provided information pertinent to the survey. Mr.C. Wall, Superintendent of Works, assisted in the investigation.

The survey included an investigation of the quality of water being discharged from municipal surface water drains, and also of the treatment and disposal of wastes from private and industrial establishments within the municipality.

GENERAL

The general direction of drainage from the Ridgetown area is towards the north, with discharge into the upper reaches of McGregor Creek, which is a tributary of the Thames River watercourse. Septic tank systems are utilized almost entirely to provide treatment for sanitary sewage and domestic wastes.

Samples were collected where possible of the discharge from the surface water drains and submitted for sanitary chemical and bacteriological analyses. The laboratory analyses of samples collected are recorded in Table 1, and the locations of sampling points are shown on the accompanying map as mileage distances from the mouth of the Thames River watercourse.

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INTERPRETATION OF ANALYSES

For convenience in the interpretation of laboratory analyses the Ontario Water Resources Commission water quality objectives for surface water drains are listed:

5-Day BOD (Biochemical Oxygen Demand) - not greater than 15 parts per million.

Suspended Solids - not greater than 15 parts per million.

Coliform Organisms (Membrane Filter Method) - not greater than 2,400 per 100 millilitres.

Anionic Detergents - An anionic detergent content in water is an additional indication of the presence of domestic wastes.

SIGNIFICANCE OF LABORATORY ANALYSES

As applied to the various municipal surface water drains.

1. Capps-Brien Surface Water Drain

This drain flows in a westerly direction, discharges into the Water Street drain, and provides general drainage for the southern sections of the town. The laboratory analyses of sample TMC 39.9, collected from the drain, shows the presence of pollution with indications that sanitary sewage and domestic wastes are the probable major sources.

2. Water Street Surface Water Drain

This drain flows in a northerly direction, and provides general drainage for the south-west and western sections of the town. Flow discharge is into the Erie Street drain at a point just south of

Algonquin Street (TMC 38.7B). Several lateral surface water drains including the following, have flow discharges into the Water Street drain at outfall points as designated.

TMC 39.41 - The sanitary chemical and bacteriological analyses of the discharge from this drain indicate satisfactory water quality. It is understood that the flow, of an estimated ten gallons per minute, originates from spring sources.

TMC 39.42 - This outfall is located on the east side of the Water Street drain and south of Ebenezer Street. At the time of inspection there was no flow.

TMC 39.4 - The laboratory analyses of samples collected of the discharge from this drain indicate a condition of excessive pollution. It is known that waste from the Maple Leaf Dairy is discharged without treatment into the drain. The presence of domestic wastes is also indicated.

TMC 39.4A - This outfall is located at the south-west corner of the Ebenezer Street bridge. There was no flow at the time of inspection.

TMC 39.3 - The sanitary chemical and bacteriological analyses of samples collected from this drain indicate gross pollution. It is probable that waste from an egg processing operation is being discharged, without treatment, into this drain. The presence of sanitary sewage and domestic waste is also indicated.

TMC 39.2 - The laboratory analyses of samples collected from this drain indicate the presence of domestic wastes. This condition is emphasized by the high coliform count and the anionic detergent content.

TMC 38.7B - The Water Street drain discharges into the Erie Street North drain at this point. The sanitary chemical and bacteriological analyses of samples collected indicate an excessively high concentration of pollution.

3. Albert Street Drain

TMC 38.8 - Water samples were collected from the Albert Street drain, north of Manitoba Street and prior to the junction with the Erie Street North drain. The laboratory analyses show extremely high concentrations of domestic sewage.

4. Erie Street Drain

TMC 38.7A - This sample, collected from the Erie Street North drain at a point north of Algonquin Street, would be representative of a composite flow from the discharges of surface water drains from almost the entire town, with the exception of an area in the north-east section. The laboratory analyses indicate a condition of gross pollution in the drain at this point and also indicate that domestic sewage may be the major cause of the pollution.

5. Victoria Street Drain

TMC 38.65 - The Victoria Street drain which provides drainage for the north-east area of town, discharges into the Gawn drain at this point at Palmer Street.

The laboratory analyses, of samples collected at the outfall, also indicate conditions of gross pollution, with inadequately treated domestic sewage suspected as being the probable source of the pollution.

INDUSTRIAL WASTE

The following industries which were considered as having waste discharges that require treatment were included in the survey.

1. Canadian Canners Co.Ltd.

This plant has been remodelled for the processing of beans only. The 1964 operation was started on July 13th and it was intended to continue until approximately October 1, or to the occurrence of frost.

As a measure of pollution abatement a spray irrigation system has been put into operation for the treatment and disposal of processing waste. This system replaces the lagoon type treatment system which was previously used. The efficient operation of this system should eliminate the possibility of the discharge of inadequately treated processing waste to any surface water drain or watercourse.

At the time of this survey the spray system had been in operation for a very short period of time. A water sample (Table #1 Sampling Point 8th Concession Drain) was collected from a Township of Howard municipal drain which is located along the eastern extremity of the spray area. It is considered that in the event of any runoff or seepage from the spray area this drain would be the receiving watercourse. Consequently the satisfactory quality of water in the drain at this time may be used as a criterion for determining future water quality conditions in the drain.

2. Maple Leaf Dairy

Mr.R. Verbeek, co-owner and operator of the Maple Leaf Dairy was interviewed and provided information pertinent to the survey.

Approximately 4,500 lbs of milk is processed and bottled daily on a five day per week basis. Water consumption was estimated at approximately 200,000 gallons per month.

Processing waste is discharged, without treatment, into a municipal surface water sewer on Ebenezer Street. This sewer outfalls to the Water Street surface water drain. (TMC 39.4).

The sanitary chemical and bacteriological analyses of a sample of the liquid discharge from this drain indicate a condition of gross pollution. A visual inspection of the discharge indicated that milky waste from the Dairy could be a major source of pollution.

3. Wilson Broom Company

Mr.R. Lightfoot, Owner-Manager was interviewed.

Water consumption in this plant is comparatively small. The only water used is in a 20 gallon dye tank which is dumped on an average of once per month. This waste is discharged without treatment into a lateral drain on James Street which has its outfall to the Water Street drain. (TMC 39.2). At the time of inspection there was no visible indication of dye material at the drain outfall.

The installation of a seepage pit for the treatment of the dye waste was discussed with Mr. Lightfoot.

4. The L.H. Gray and Son Creamery and Egg Grading Station

The butter manufacturing process has been discontinued in this plant, consequently there is no industrial waste being discharged to any surface water drain.

CONCLUSIONS

It is readily noted from the laboratory analyses and from visible conditions that pollution is present in the surface water drains in the municipality. The combined flows from these drains discharge into the Harrison drain which is one of the upper reaches of McGregor Creek and a tributary to the Thames River watercourse. It is therefore concluded that the illegal practice on behalf of the municipality of permitting the discharge of inadequately treated wastes to the surface water drains is a major factor in the pollution of the receiving watercourse.

The need for a sewerage works programme has been pointed out to municipal officials by various OWRC reports, correspondence and meetings. The requirements for the institution of such a programme have been determined and presented in a Consulting Engineer's report. However, to date no direct action has been taken to proceed with the installation of sanitary sewers and a method of sewage treatment.

SUMMARY

A water pollution survey was made in the Town of Ridgetown on July 23, 1964.

Varying concentrations and conditions of pollution were present in all municipal surface water drains investigated.

General drainage from the town flows in a northerly direction into a common drain on North Erie Street, and discharges into the Harrison drain in the Township of Howard. The Harrison drain is one of the upper reaches of McGregor Creek, which is a part of the Thames River watershed.

The major sources of pollution are shown, by visible conditions and laboratory analyses, to be discharges of inadequately treated waste from private and commercial properties, and from industrial operations such as a dairy, laundry and an egg processing plant.

The need for sanitary sewers and sewage treatment has been presented to the town on various occasions through OWRC reports and meetings.

The requirements for instituting such a programme have been determined and presented to the municipality by a Consulting Engineer. To date no direct action has been taken to institute sewerage works.

RECOMMENDATIONS

1. The Town of Ridgetown should consolidate the planning for a sewerage works programme, and proceed with the installation of sanitary sewers and the construction of a method of sewage treatment.

2. In the event that the institution of such a project is not feasible, it will then be necessary that all discharges of inadequately treated wastes to surface water drains and storm sewers, be located and discontinued. This action will therefore require each private and commercial property owner to provide adequate treatment for wastes eminating from his property. Similarly adequate treatment should be provided for the waste from each industrial operation.

All of which is respectfully submitted,

District Engineer C.E. McIntyre
C.E. McIntyre

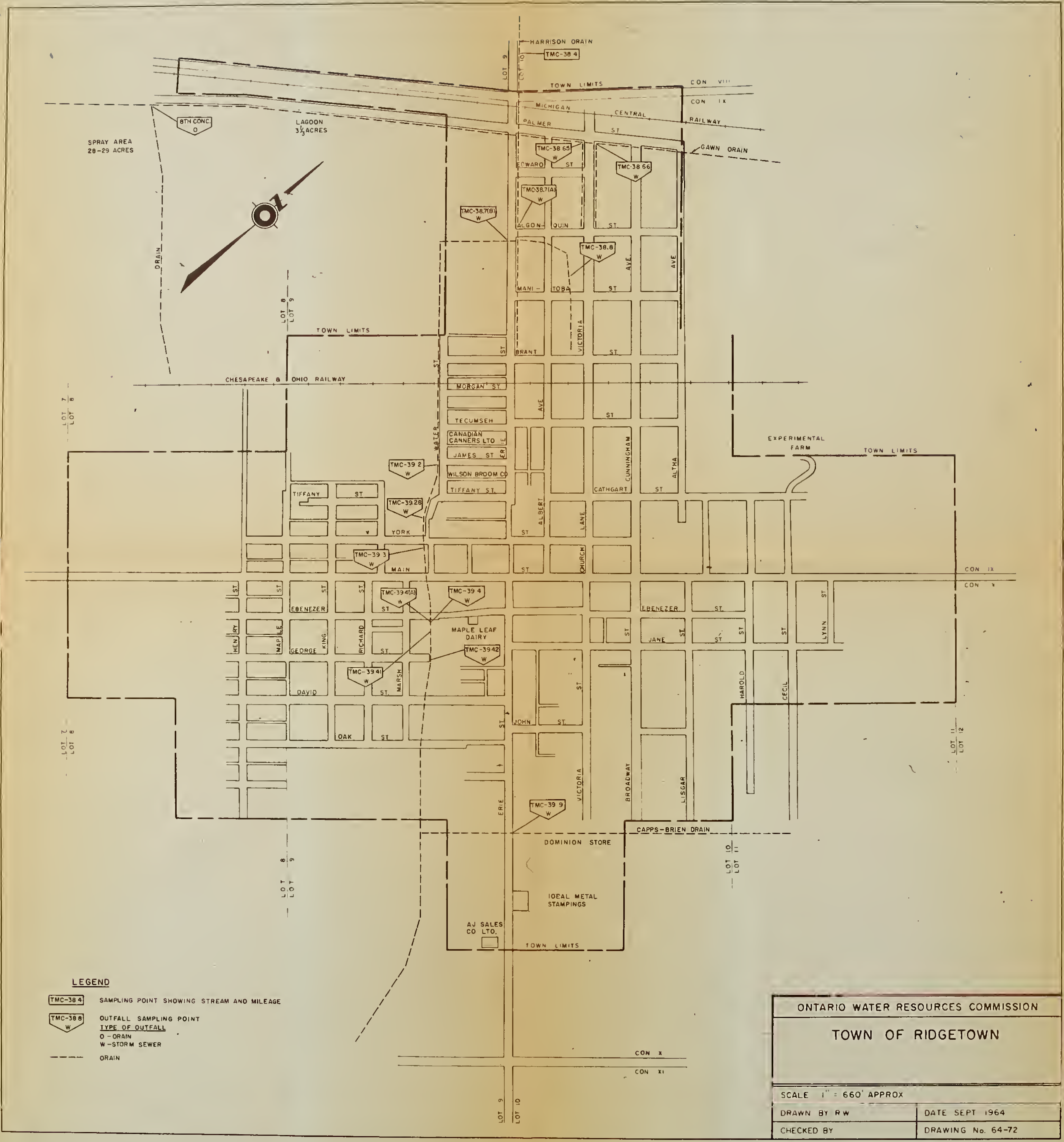
Approved by K.H. Sharpe
K.H. Sharpe, Director.

elb

TABLE I

TOWN OF RIDGETOWN - WATER POLLUTION SURVEY

Location of Sampling Points	5-Day BOD (ppm)	Solids Total (ppm)	 Susp. (ppm)	 Diss. (ppm)	Anionic Detergents as ABS (ppm)	Coliforms per 100 ML Membrane Filter
Capps-Brian Drain						
TMC 39.9	5.6	328	21	307	0.5	19,000
Water St.Drain						
TMC 39.41	4.0	242	2	240	0.0	18
TMC 39.4	330.0	798	126	672	0.0	50,000
TMC 39.3	24.0	348	33	315	0.0	560,000
TMC 39.2	6.4	696	33	663	5.2	1,200,000
TMC 38.7B	2.8	510	19	491	0.2	5,200
Albert St.Drain						
TMC 38.8	8.8	1,014	430	584	1.3	3,300,000
Victoria St.Drain	16.0	594	98	496	1.8	2,350,000
TMC 38.65 (West Side)						
TMC 38.66 (East Side)	1.6	604	3	601	0.1	180,000
Erie St.Drain						
TMC 38.7A	10.0	562	7	555	0.4	230,000
TMC 38.4	9.2	926	36	890	0.0	3,200
8th Conc.Drain (Twp.of Howard) (from spray irrigation area).	1.6	212	40	172	0.0	830



ONTARIO WATER RESOURCES COMMISSION

TOWN OF RIDGETOWN

SCALE 1" = 660' APPROX	
DRAWN BY R W	DATE SEPT 1964
CHECKED BY	DRAWING No. 64-72

ONTARIO WATER RESOURCES COMMISSION
801 BAY STREET
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